Vocabulary

Vocabulary

Use the vocabulary words and definitions below as a reference for this unit.

area (*A*) ..... the measure, in square units, of the inside region of a closed two-dimensional figure; the number of square units needed to cover a surface
Example: A rectangle with sides of 4 units by 6 units has an area of 24 square units.

axes (of a graph) ..... the horizontal and vertical number lines used in a coordinate plane system; (singular: *axis*)

coefficient ..... the number that multiplies the variable(s) in an algebraic expression
Example: In $4xy$, the coefficient of xy is 4.
If no number is specified, the coefficient is 1.

consecutive ..... in order
Example: 6, 7, 8 are consecutive whole numbers and 4, 6, 8 are consecutive even numbers.

coordinate grid or **plane** ... a two-dimensional network of horizontal and vertical lines that are parallel and evenly spaced; especially designed for locating points, displaying data, or drawing maps

coordinates ..... numbers that correspond to points on a coordinate plane in the form (x, y), or a number that corresponds to a point on a number line

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distributive property .....the product of a number and the sum or difference of two numbers is equal to the sum or difference of the two products
Examples: $x(a + b) = ax + bx$
$5(10 + 8) = 5 \bullet 10 + 5 \bullet 8$

equation .....a mathematical sentence stating that the two expressions have the same value
Example: $2x = 10$

equivalent expressions ....expressions that have the same value but are presented in a different format using the properties of numbers

even integer.....any integer divisible by 2; any integer with the digit 0, 2, 4, 6, or 8 in the units place; any integer in the set {… , -4, -2, 0, 2, 4, …}

factor .....a number or expression that divides evenly into another number; one of the numbers multiplied to get a product
Examples: 1, 2, 4, 5, 10, and 20 are factors of 20 and $(x + 1)$ is one of the factors of $(x^2 - 1)$.

factored form .....a number or expression expressed as the product of prime numbers and variables, where no variable has an exponent greater than 1

factoring .....expressing a polynomial expression as the product of monomials and polynomials
Example: $x^2 - 5x + 4 = 0$
$(x - 4)(x - 1) = 0$

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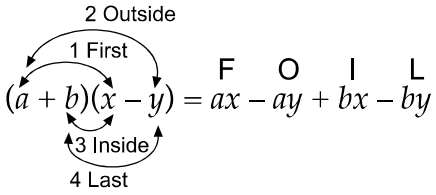
FOIL method.....a pattern used to multiply two binomials; multiply the first, outside, inside, and last terms:
F **F**irst terms
O **O**utside terms
I **I**nside terms
L **L**ast terms.
Example:



formula .....a way of expressing a relationship using variables or symbols that represent numbers

fraction .....any part of a whole
Example: One-half written in fractional form is $\frac{1}{2}$

graph .....a drawing used to represent data
Example: bar graphs, double bar graphs, circle graphs, and line graphs

graph of an equation .....all points whose coordinates are solutions of an equation

inequality .....a sentence that states one expression is greater than (>), greater than or equal to (≥), less than (<), less than or equal to (≤), or not equal to (≠) another expression
Examples: $a \neq 5$ *or* $x < 7$ *or* $2y + 3 \geq 11$

infinite .....having no boundaries or limits

integers .....the numbers in the set
{… , -4, -3, -2, -1, 0, 1, 2, 3, 4, …}

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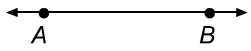
intersect ..... to meet or cross at one point

intersection ..... the point at which lines or curves meet

length (*l*) ..... a one-dimensional measure that is the measurable property of line segments

line ($\longleftrightarrow$) ..... a collection of an infinite number of points forming a straight path extending in opposite directions having unlimited length and no width



monomial ..... a number, variable, or the product of a number and one or more variables; a polynomial with only *one* term

Examples: 8 x $4c$ $2y^2$ -3 $\frac{xyz^2}{9}$

negative integers ..... integers less than zero

negative numbers ..... numbers less than zero

odd integer ..... any integer not divisible by 2; any integer with the digit 1, 3, 5, 7, or 9 in the units place; any integer in the set {… , -5, -3, -1, 1, 3, 5, …}

ordered pair ..... the location of a single point on a rectangular coordinate system where the first and second values represent the position relative to the x-axis and y-axis, respectively

Examples: (x, y) *or* (3, -4)

parallel ($\parallel$) ..... being an equal distance at every point so as to never intersect

point ..... a specific location in space that has no discernable length or width

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polynomial ..... a monomial or sum of monomials; any rational expression with no variable in the denominator
Examples: $x^3 + 4x^2 - x + 8$ $5mp^2$
$-7x^2y^2 + 2x^2 + 3$

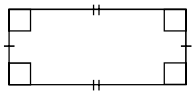
positive integers ..... integers greater than zero

product ..... the result of multiplying numbers together
Example: In 6 x 8 = 48, the product is 48.

quadratic equation ..... an equation in the form of $ax^2 + bx + c = 0$

quadratic formula ..... formula used to solve any quadratic equation; if $ax^2 + bx + c = 0$ and $a \neq 0$, then $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

rectangle ..... a parallelogram with four right angles



simplify an expression ..... to perform as many of the indicated operations as possible

solution ..... any value for a variable that makes an equation or inequality a true statement
Example: In $y = 8 + 9$
$y = 17$ 17 is the solution.

solution set ({ }) ..... the set of values that make an equation or inequality true
Example: {5, -5} is the solution set for $3x^2 = 75$.

solve ..... to find all numbers that make an equation or inequality true

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standard form (of a quadratic equation) ..... $ax^2 + bx + c = 0$, where a, b, and c are integers (not multiples of each other) and $a > 0$

substitute ..... to replace a variable with a numeral
Example: $8(a) + 3$
$8(5) + 3$

substitution ..... a method used to solve a system of equations in which variables are replaced with known values or algebraic expressions

sum ..... the result of adding numbers together
Example: In $6 + 8 = 14$, the sum is 14.

system of equations ..... a group of two or more equations that are related to the same situation and share variables
Example: The solution to a system of equations is an ordered number set that makes all of the equations true.

table (or chart) ..... a data display that organizes information about a topic into categories

term ..... a number, variable, product, or quotient in an expression
Example: In the expression $4x^2 + 3x + x$, the terms are $4x^2$, $3x$, and x.

value (of a variable) ..... any of the numbers represented by the variable

variable ..... any symbol, usually a letter, which could represent a number

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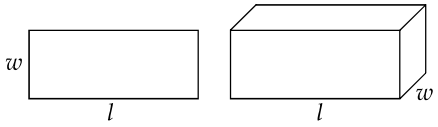
Venn diagram ..... overlapping circles used to illustrate relationships among sets

vertical ..... at right angles to the horizon; straight up and down

width (w) ..... a one-dimensional measure of something side to side



***x*-intercept** ..... the value of x at the point where a line or graph intersects the x-axis; the value of y is zero (0) at this point

***y*-intercept** ..... the value of y at the point where a line or graph intersects the y-axis; the value of x is zero (0) at this point

zero product property ..... for all numbers a and b, if $ab = 0$, then $a = 0$ and/or $b = 0$